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Some OBSERVATIONS on the present Position of STATISTICAL INQUIRY, with SUGGESTIONS for IMPROVING the ORGANIZATION and EFFICIENCY of the INTERNATIONAL STATISTICAL CONGRESS.

THE two following papers appeared in the "Economist" newspaper of the 4th and 11th August, 1860.

I.

"The meeting in London, under the Presidency of the Prince Consort, of the Fourth Session of the International Statistical Congress, has naturally directed a large amount of attention to a branch of enquiry not overlooked or undervalued by ourselves. The Congress itself is a fact and symptom of the present time in many ways remarkable. The basis of the Association is, that in every second year the several civilised States of the world should be officially invited by the Government of some one of them to send to its capital persons duly accredited and instructed, and supposed to be competent, to enter into discussions and conferences relating to the best methods of promoting Statistical investigations throughout the whole range of subjects which fall within the province of legislation. Already on three former occasions, viz.,—at Brussels in 1853, at Paris in 1855, and at Vienna in 1857—meetings on this basis have been held,—have been attended by official delegates from a considerable number of countries, European and Transatlantic,—and have issued reports and documents which have commanded, by their scientific and practical character, a large amount of attention. The meeting which commenced in London on the 16th July, and continued on the five following days, was the fourth repetition of the experiment of a Congress, and we hear on all hands that at no former meeting has the attendance been larger, the proceedings more earnest, or the results more encouraging.

"The organization of these meetings is a task imposing great labour, no small expenditure of time, the co-operation of hundreds of intelligent men of all countries, and the outlay of no trifling sum of money. But this labour and cost has now been repeated for the fourth time, and will be repeated for the fifth in 1862 at Berlin. The Congress itself, therefore, is a hard fact, testifying by its vitality and success to the existence of some want so generally felt that even the official classes throughout Europe and America are willing to depart from their usual routine, in order to promote the search for some means of meeting that want.

"In a few words, this want may be said to be the indication of nothing less than the necessity under which all Governments are

rapidly finding themselves placed, of understanding as clearly and fully as possible the composition of the social forces which, so far, Governments have been assumed to control, but which now, most men agree, really control Governments. The world has got rid of a good many intermediate agencies, all of them supposed originally to be masters, where, in truth, they were even less than servants. The rain and the sun have long passed from under the administration of magicians and fortune-tellers; religion has mostly reduced its pontiffs and priests into simple ministers with very circumscribed functions; commerce has cast aside legislative protection as a reed of the rottenest fibre; and now, men are gradually finding out that all attempts at making or administering laws which do not rest upon an accurate view of the social circumstances of the case, are neither more nor less than imposture in one of its most gigantic and perilous forms.

“Men are also finding out, as did the natural philosophers three hundred years ago, that, speaking in a large sense, our social and legislative philosophy is scarcely more than a bundle of general notions and propositions, unfortified by any adequate series of observations made by competent persons, recorded in a satisfactory manner, and analysed and digested by a rigid logic into scientific expressions fairly representing common results. The sense of this great void has during the last ten years become increasingly acute in this and in most other countries. The armoury of the ancient statecraft has been found to be almost as supremely effete as the cross-bows of the Crusaders. Crime is no longer to be repressed by mere severity,—Education is no longer within the control of the maxims which preceded printing,—Law is found to be a science perhaps the most difficult of any,—Justice means more than tricks and plausibilities of procedure;—Taxation, Commerce, Trade, Wages, Prices, Police, Competition, Possession of Land,—every topic from the greatest to the least which the old legislators dealt with according to a caprice as absolute as is exercised by the potter over his vessel,—have all been found to have laws of their own, complete and irrefragable. There is already abroad an idea, more or less distinct, of what has been called,—provisionally perhaps,—Social Science; and so popular is that idea, that in this country we have an Association, progressive and successful, which, by annual meetings in our large towns, seeks by a week of debates and conferences expressly to promote Social Science,—implying in this phrase whatever affects the material moral, or mental condition of man in civilized society.

“But the more intelligent cultivators of this new study are painfully sensible that, so far, they are mere dwellers upon the threshold of the temple they seek to enter and understand in all its parts. They are oppressed on all sides with suggestions and theories, and

they find themselves assailed, even upon the most fundamental points, with hypotheses clearly unsound, but as clearly unrefutable by means of any positive doctrine resting upon ample scientific data.

“The International Statistical Congress has set itself the task of procuring this scientific data ; and in the present state of the world, no higher or more useful service could be undertaken for the furtherance of the best interests of the species.

“Statistics in social philosophy hold the same place as Experiments in natural philosophy. Observations of natural phenomena are among the earliest and most inevitable applications of the faculties of the human mind. But so long as these observations were capricious, irregular, imperfect, and obscure, they were of no more value in the construction of science than the loose traditions of a Tartar tribe. Men debated on the nature of motion and the composition of matter in the same abstract and general terms in which we at present discuss the effects to be produced by particular schemes of law, and the operation in actual practice of particular schemes of interference with the economical condition of a people. In the case of the ancient physical philosophy, the *a priori* view, abstract and general as it was, did undoubtedly contain some portion of the real truth. But, as a whole, that philosophy was no more than an ingenious mental diversion. For all practical purposes, it was worthless and deceptive. The outside analogies served very badly as guides to the modifications and cross influences by means of which nature adapts all general laws to her complex machinery. So it is at present with social problems. Intelligent men see the phenomena from the outside,—they speculate upon the nature of the subtle forces which are at work beneath,—and, led forward by that passion for symmetrical system which has played so great and also so mischievous a part in the history of the human mind, they expand their notions into creeds and bodies of doctrine to be defended with all the fierceness of first discoveries.

“It is certain, however, that if experiment in its highest scientific forms was needful to the building up of a Natural philosophy as solid as it is comprehensive, still more needful is experiment, assisted and guided by the best and latest lights, to the building up of a Social philosophy which, in its turn, shall rear its pinnacles to an elevation as high and from a platform as immovable.

“We will not say that hitherto statistics have been, as were the earliest physical observations, capricious, irregular, imperfect and obscure. The exact contrary of such a statement would be no more than the bare truth in a large number of instances—as, for example, in the important field of vital statistics. But, regarded comprehensively, it is strictly true that we are only just beginning to comprehend

the real nature, the proper limits, and the specific force of the labours of the philosophical statist.

“ In a sense very large and absolute, he is merely the intelligent ally of the cultivators of branches of knowledge in themselves complete. He can inform the student of Jurisprudence how many suitors have resorted to a particular court, or availed themselves of a particular statute; but it is beyond his province to discuss the origin or authority of the tribunal, or the policy or provisions of the enactment. Statistics in like manner are the allies of medicine, of police administrators, of sanitary authorities, and of a large class of kindred branches of inquiry. In these cases the office of the statistician is subordinate to the office of him who cultivates the larger science from which is derived the principles and scope of the enquiry. The jurist must classify his crimes and civil causes in accordance with enlightened rules of logic and equity, and the statist can do no more than fill up the schedules prescribed by this higher and special knowledge. But even here there is a limitation not to be overlooked. A cultivator of merely abstract studies is generally the worst and most incompetent observer of the practical operation even of those principles of which he understands the most; and it is here that the statist steps forward and tells him that unless his methods of observation be adjusted with a nice regard to the actual exigencies of the case—unless they avoid the trivial and set forth the vital bearings of the question—he must still submit to be deprived of all real aid from positive observations.

“ There, is, therefore, within all the larger social sciences an inner and smaller science which takes charge of the duty of verifying or confuting by facts, collected, classified, and reduced into simple general results, the larger doctrines which arise from the *a priori* discussion of principles.

“ But beyond this auxiliary position, the statist has a department entirely his own. Throughout all civilized societies, as throughout all physical nature, there is a series of positive *Units* which represent the numerical force or expression of every class of the phenomena to be dealt with. The mean temperature, for example, of this island is expressed by a given figure,—and so is the mean duration of human life. In like manner we may arrive at units more or less trustworthy as regards the mean annual number of crimes in this island of a given class,—of accidents of a given kind,—of the average amount of wages in a given trade,—of the average annual amount of exports per head of population,—and so on through a long catalogue. If a series of units of this character could be determined rigidly for each civilized State, we should have before us a chart of the social economy of the world almost as complete as the charts we already possess of its physical geography.

“But between our present imperfect knowledge and the attainment of such an end, there stretches, now, a wide and untamed wilderness. But that wilderness will be traversed, and it will be traversed by a steady perseverance in the path of vigorous statistical inquiry which has marked the last ten years. Students in all countries are now agreed that the first step must be some method of uniform observation, and they are partly agreed as regards the principles of that uniformity. By-and-by will arise clearer notions of method, exacter views of the scope and aim of the objects to be pursued, and precise canons as regards the composition and force of averages, and numerical modes of statement. We shall advance from the less to the greater,—from the circumference towards the centre; and the generation which witnesses the termination of the task, will not be backward to reckon the completed labour among the noblest inheritances won by the patient sagacity of the human mind.”

II.

“Last week we considered the general questions arising out of the design and labours of the recent meeting here of the International Statistical Congress. We have now to offer some suggestions for increasing the efficiency of the procedure adopted by the Congress.

“The plan of seeking to promote the cultivation of departments of knowledge by periodical gatherings—(not in the same place, but in different places)—more or less miscellaneous of persons who take an interest in the particular pursuit, is one of the useful and successful innovations of recent years. The first leading example was furnished by the British Association for the Advancement of Science,—meaning by science, so far as the Association was concerned, physical science almost exclusively. The thirty years’ career of that distinguished body has practically solved the somewhat difficult problem of obtaining continuous work and valuable results from the meeting once a year of a large number of persons, most of them personally strangers to each other, and drawn together so little by means of any rigid qualification, that full admission to all discussions and meetings has from the first depended merely upon the payment of a small fee. It fortunately happened, however, that at the outset of the enterprise the happy expedient was hit upon of dividing the general mass into five or six specific parts or Sections, each charged with a special group of topics, and of placing at the head of each section a few men, markedly eminent in connection with those topics. By this device, discussions which would have been impossible in the midst of the whole body became possible, practicable, and interesting. The strength, therefore, of the British Association lays in the vigour of its Sections, and in the skill and energy with which these sections

are conducted,—and it is precisely in proportion to the degree in which all subsequent and similar bodies have perceived and adopted this *sectional principle** that the element of real work has been developed.

“ Great, however, as has proved to be the capacity and usefulness of the Sections of the British Association, there will be few of its regular members who will hesitate to acknowledge that this capacity and this usefulness would be very largely increased if to each section could not only be allotted a particular subject—Geology for example—but if further, there could be assigned by prior arrangement to *each annual meeting of each Section* some specified class of questions relating to its own allotted science. At present, no one can tell beforehand in what direction the inquiries or discussions of a section will run, and hence an absence of precision and preparation very often to be regretted.

“ Now the International Statistical Congress has to a large extent avoided this defect from the outset—for the founders of the Congress adopted as a fundamental rule, that while the principle of a *sectional* division of topics should be followed, there should also be for each section a Programme prepared, printed, and distributed beforehand, not merely setting forth the mere heads of the business to be brought forward, but presenting to the section a preliminary survey and discussion of the scope and design of the questions to be considered. These programmes have generally been prepared by persons reasonably competent to take a leading part in the discussion of the subjects referred to them. There have, of course, been great inequalities in the execution of a series of papers so extensive, but as the general result it may be affirmed with much truth, that it is to the efficiency of the programmes that a large part of the real usefulness of the several meetings of the Congress may be attributed. In those cases where the programmes have been carefully prepared with a view to placing the questions desired to be raised, in a specific and comprehensive form before the section concerned, the debates have been, as a rule, systematic and useful, and the results positive and clear.

“ It seems to us, therefore, that as regards the Statistical Congress, the object to be kept most constantly in view is the improvement

* There are six sections at the meetings of the British Association, viz.:—Mathematics and Physics—Chemistry and Mineralogy—Geology, Zoology, Botany, and Physiology—Geography and Ethnology—Economic Science and Statistics—and Mechanical Science. There are also six sections at the meetings of the National Association for Promoting Social Science, viz.: Amendment of the Law—Education—Prevention and Repression of Crime—Reformation of Criminals—Sanitary Science—and Social Economy. At the recent meeting in London of the International Statistical Congress there were also six sections, viz.: Judicial Statistics—Sanitary Statistics—Industrial, Agricultural, and Mining Statistics—Commercial Statistics—Census Statistics—and Statistical Methods.

still more of the present excellent plan of sectional programmes prepared and distributed in ample time before each meeting. We are quite sure also, that if the same practice could be introduced in some form or other into the British Association, and the Association for Promoting Social Science, the favourable results would be speedy and decisive.

“It happens, however, with the Statistical Congress, that while its arrangements of sections and programmes present plans for imitation, its method of working out these plans is seriously defective. In the British Association the whole working hours of each day are assigned to the Sections, and the proceedings of each section as regards its own labours and discussions are final. There is no appeal from the section to the general miscellaneous body of members. But with the Statistical Congress the practice is to abridge the work of the Sections to half the working hours, and to consume the other half in desultory discussions in the midst of the entire body of persons assembled. In other words, decisions are reported from select numbers of persons who have patiently considered all the bearings of the case, to a loose fluctuating meeting who have not heard the arguments, and have not time to consider the particular point brought forward. The chief evil entailed by this unfortunate plan is great waste of time, but sometimes it leads to ultimate decisions more hasty than defensible.

“Another defect also is the reception from each of the Foreign Delegates of what is called a report of the progress of Statistical inquiry since the preceding Congress in the country he represents. For practical or scientific purposes these reports are generally of small value. The better plan of dealing with them would be to establish a distinct section for the reception and discussion of International Progress Reports, and to seek, by means of a careful preliminary programme, to impart some degree of scientific uniformity and precision to the documents to be sent in. At all events, the present unprofitable expenditure of the latter half of the working day should be at once corrected. Following the example of the British Association, it is probable that one or two general meetings might be held for the delivery of discourses on some assigned topic of interest. But the purposeless speeches and the offensive frequency of mutual compliments which disfigure the general miscellaneous meetings should be abated with a vigorous hand, as blemishes discreditable in themselves and full of danger.

“But supposing all these reforms to be adopted, the Statistical Congress would have still to contend with a difficulty of the gravest kind. The meetings take place in alternate years. But during the intervening two years the organization is practically dissolved. There remains in force no competent central power qualified and

bound to watch over the progress of inquiry during the interval, and vigilant to promote the fulfilment of the recommendations adopted at the former meetings. But if the meetings are to be really efficient, there must be systematic preparation during the period of time which separates them. We may seem to treat the matter in over-serious a spirit, and to convert into business something which is taken up for pleasure. Our reply is, that if the pretensions put forward are intended to bear a serious meaning, the enterprise must be dealt with as a reality and not as a toy. The intention is to advance our knowledge of a most important and difficult class of questions relating to human societies—and unless the whole proceeding is to provoke ridicule, the means adopted must be such as will produce solid and valuable results—and solid and valuable results can only be the results of labour and contrivance. Those who will not comply with the conditions should not intrude themselves into the enterprise.

“Probably the best place for the establishment of a Central Committee would be Brussels. Hamburg would in some respects be preferable, but on the whole would not be so eligible as the Belgian capital. Two or three leading men could be found in Brussels to form the committee, and there could also be found there a man with the needful accomplishments as a linguist and statist, who, in return for no very extravagant *honorarium*, would act as central secretary of the Congress between its meetings. The needful funds would be provided, as in other similar cases, by a small membership fee, and by the sale of reports and programmes. In other respects, the present plan of bearing the expenses of the meetings may for a time at least be continued.

“We have gone somewhat out of our usual path for the purpose of considering the questions herein adverted to. But we have had the less hesitation in doing so, because we recognise in the British Association, the Statistical Congress, and the Social Science Association, at least the rudiments of one of the most powerful methods hitherto suggested for the vigorous prosecution of branches of inquiry most vital to human welfare. It is too much the custom in such societies to contract a habit of obstructive complacency. The casual visitors see too little to understand the whole. The regular attendants become intensely conservative of everything which familiarity has made easy to them. The meetings occur but once a year, and last only a week; imperfections, therefore, however apparent, are felt but for a short time, and hence it is that suggestions such as we now offer, not in any hostile, but in an eminently friendly spirit, may perhaps be of service.”